What is Claimed is:

1. A method for preparing carbon products from discarded rubber comprising the steps of:

pyrolyzing the rubber to obtain a volatiles fraction and a residual char; and

subjecting said char to resonance disintegration of an intensity sufficient to produce an ultrafine carbon powder, said powder characterized in having a particle size distribution when dispersed in water such that at least 75% by volume of the powder particles are less than 10μm in diameter.

2. The method of claim 1 wherein said resonance disintegration is conducted at ambient temperature in an air medium.

3. The method of claim 1 wherein said discarded rubber comprises debeaded and shredded scrap vehicle tires.

4. The method of claim 1 wherein said rubber is pyrolyzed in an externally heated, closed retort at a temperature in the range of 450° to 650° C until emission of volatiles ceases.

5. The method of claim 1 wherein said resonance-disintegrated carbon powder particles are subjected to a further treatment that modifies the surface properties of said powder particles.

6. The method of claim 5 wherein said treatment comprises contacting the carbon powder with a reactant compound during or after resonance disintegration.

7. The method of claim 6 wherein said reactant compound binds to particle surfaces through Van der Walls forces.

8. The method of claim 7 wherein said reactant compound comprises a polynuclear aromatic hydrocarbon.

9. The method of claim 6 wherein said reactant compound chemically reacts with functional groups present on the carbon particle surfaces.

10. The method of claim 9 wherein said reactant compound is selected from the group consisting of peroxides, chlorosilanes, and acid chlorides.

11. The method of claim 6 wherein said reactant compound is an organo-metallic coupling agent.

12. The method of claim 11 wherein said coupling agent is selected from the group consisting of liquid, multi-functional titanates, zirconates, and aluminates and wherein said contacting comprises spraying a sufficient amount of atomized coupling agent into an fluidized suspension of carbon particles to form at least a partial monomolecular layer of agent on the carbon particle surfaces.

13. The method of claim 12 wherein the amount of coupling agent is in the range of 0.1% to 1.0% by weight of carbon particles, and wherein said coupling agent-treated particles are thereafter dispersed in a liquid vehicle to form a suspension.

14. The method of claim 13 wherein said liquid vehicle is selected from the group consisting of water, alcohol, toluene, and mineral spirits.

15. The method of claim 14 wherein said suspension comprises a paste concentrate containing between 10% and 35% solids.

16. The method of claim 15 wherein said concentrate is later further diluted with said liquid vehicle to form an ink.

17. The method of claim 16 wherein said liquid vehicle is water.

18. A carbon powder composition produced by the process of claim 1.

19. The composition of claim 18 dispersed in a liquid vehicle to form a suspension.

20. The composition of claim 19 wherein said liquid vehicle is water and wherein said liquid suspension is a printing ink.

21. A method for modifying the surfaces of carbon particles that comprises subjecting the carbon particles to resonance disintegration and contacting the carbon with a reactant compound during or immediately after the resonance disintegration.

22. The method of claim 21 wherein said reactant compound binds to carbon particle surfaces through Van der Walls forces.

23. The method of claim 21 wherein said reactant compound chemically reacts with functional groups present on the carbon particle surfaces.

24. The method of claim 23 wherein said reactant wherein said reactant compound is selected from the group consisting of peroxides, chlorosilanes, and acid chlorides.

25. The method of claim 21 wherein said reactant compound is an organo-metallic coupling agent.

26. The method of claim 21 wherein said coupling agent is selected from the group consisting of liquid, multi-functional titanates, zirconates, and aluminates and wherein said contacting comprises spraying a sufficient amount of atomized coupling agent into an fluidized suspension of carbon particles to form at least a partial monomolecular layer of agent on the carbon particle surfaces.

27 The method of claim 26 wherein the amount of coupling agent is in the range of 0.1% to 1.0% by weight of carbon particles, and wherein said coupling agent-treated particles are thereafter dispersed in a liquid vehicle to form a suspension.